In the Claims

1 (withdrawn). An isolated polynucleotide sequence wherein said polynucleotide sequence encodes a serine protease and wherein said polynucleotide sequence hybridizes, under high stringency conditions, with SEQ ID NO. 2.

2 (withdrawn). The polynucleotide sequence, according to claim 12, wherein said sequence encodes an amino acid sequence comprising SEQ ID NO. 1.

3 (currently amended). A method for identifying thermostable enzymes that catalyze the formation of peptide bonds comprising which comprises contacting a solution to be assayed for the presence of said thermostable enzymes with known peptide or polypeptide substrates; heating said mixture; and then determining if said peptide or polypeptide substrates have formed peptide bonds been ligated to form ~~polypeptides~~ to form polypeptides.

4 (withdrawn). A method for cleaving a peptide bond which comprises contacting a molecule having said peptide bond with a protease comprising SEQ ID NO:1, wherein said protease has an apparent molecular weight of 81 kDa as determined by SDS gel electrophoresis, catalyzes the cleavage of benzoyl-tyrosine ethyl ester, and can be obtained from *P. furiosus*.

5 (new). The method according to claim 3, further comprising the isolation of the thermostable enzyme catalyzing the formation of peptide bonds.

6 (new). The method according to claim 3, wherein said thermostable enzymes are catalytically active at temperatures of greater than 60°C.

7 (new). The method according to claim 3, wherein said assay is conducted in the absence of organic solvents.